SYSTEMATIC PLACEMENT AND DISTRIBUTION OF *ULOPORUS OVALIS* CASEY (COLEOPTERA: HETEROMERA: ARCHEOCRYPTICIDAE)

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ABSTRACT

The monotypic genus *Uloporus* Casey is concluded to belong within the family unit Archeocrypticidae, based on adult morphology. Distribution of *U. ovalis* Casey is extended northward to Kentucky and southward to Panama. A checklist of the New World archeocrypticids, a brief taxonomic history, and illustrations of significant characters are provided.

The monotypic genus *Uloporus* was described by Casey (1889:184) and assigned to the tribe Diaperini of the family Tenebrionidae. Triplehorn (1965:360) pointed out the inconsistencies of this arrangement but provisionally retained *Uloporus* in the Diaperini for lack of a suitable alternative. Recent work by Kaszab (1964) and Watt (1974) has apparently provided an answer to the taxonomic placement of *Uloporus.*

Waterhouse (1878:228) described the genus *Enneboeus* to include only his species, *E. ovalis* Waterhouse (1878:229), from Tasmania. Champion (1892) described 3 Neotropical species of *Enneboeus (marmoratus,* Mexico; *seriatus,* Colombia; *uniformis,* Panama) and later (1894:375) added a second Tasmanian species, *E. australis.*

Kaszab (1964) described the genus *Archeocrypticus* to include his two new species, *A. topali* and *A. patagonicus,* both from Argentina and both subsequently recorded from Chile (Peña 1966:437). In the same paper, Kaszab pointed out that the three Neotropical species described by Champion also belong to *Archeocrypticus* and that the two Tasmanian species of *Enneboeus* are not congeneric with *Archeocrypticus.*

Kaszab (1964) further stated that *Archeocrypticus* and his new genus *Sivacrypticus* (Kaszab 1964:384), including *S. taiwanicus* Kaszab from Taiwan and *S. indicus* Kaszab from India, together constitute a separate tribe which he named Archeocrypticini. He suggested that *Enneboeus* perhaps belongs there also, or at least closer to Crypticini than to Diaperini where currently placed.

Watt (1974:388) contended that a separate family, including *Enneboeus, Archeocrypticus,* and *Sivacrypticus,* is warranted and coined the name Archeocrypticidae which he indicated would be "defined more fully in a later paper".

We are not prepared at this time to settle the problems involving higher categories, particularly in regard to the Old World fauna. We are, however, convinced that the affinities of *Uloporus ovalis* clearly lie with the genus *Archeocrypticus* as defined by Kaszab, and that this complex of genera requires a separate family as advocated by Watt. Since we have not seen specimens of either *Enneboeus* (*sensu* Kasab 1964) or *Sivacrypticus,* we can-

not place these genera with certainty, but the New World components of Archeocrypticidae may be outlined as follows:

Checklist of New World Archeocrypticidae

Archeocrypticus Kaszab, 1964:360
- *uniformis* (Champion), 1892:540, pl. 23, fig. 4 (Panama)
- *marmoratus* (Champion), 1892:540 (Mexico)
- *seriatus* (Champion), 1892:540 (Colombia)
- *topali* Kaszab, 1964:361 (Argentina)
- *patagonicus* Kaszab, 1964:364 (Argentina)

Uloporus Casey, 1889:184
- *ovalis* Casey, 1889:185 (U.S.A., Texas)

Materials and Methods

Our study is based on about 80 specimens of *Uloporus ovalis*. The following acronyms represent collections where the specimens are deposited: CNCI—Canadian National Collection of Insects, Ottawa; JRAC—J. Roger Ables (private collection), College Station, Texas; LEWC—Larry E. Watrous (private collection), Columbus; OSUC—Ohio State University, Department of Entomology, Columbus; QDWC—Quentin D. Wheeler (private collection), Columbus; USNM—National Museum of Natural History, Smithsonian Institution, Washington.

Specimens were examined in detail and illustrated from disarticulations prepared according to the methods discussed by Wheeler (1979). We use the following abbreviations for specific structures in the illustrations; terminology is taken from Doyen (1966), Watt (1974), or improvised where found lacking:

bp	basal piece
cxl	procoxa
ds	duct sclerite
ed	ejaculatory duct
fml	profemur
lp	lateral process (of prosternal process)
ls	lateral setae (of paramere)
pb	postcoxal bridge
pn	penis
pnr	penis rod
pp	prosternal process
pr	paramere
sc	spermathecal capsule
sd	spermathecal duct
III-VII	abdominal sternum III to VII (visible sterna 1-5)

Systematic Placement

Our examination of *Uloporus ovalis* Casey indicates placement in the Archeocrypticidae family unit of Watt (1974), based on agreement with the following adult characters given by Watt for the archeocrypticids; no larval *Uloporus* were available. It is beyond the scope of this paper to discuss character polarity or phylogenetic relationships; however, structure of the prosternum and abdominal sterna seem so unusual as to suggest autapotypy.

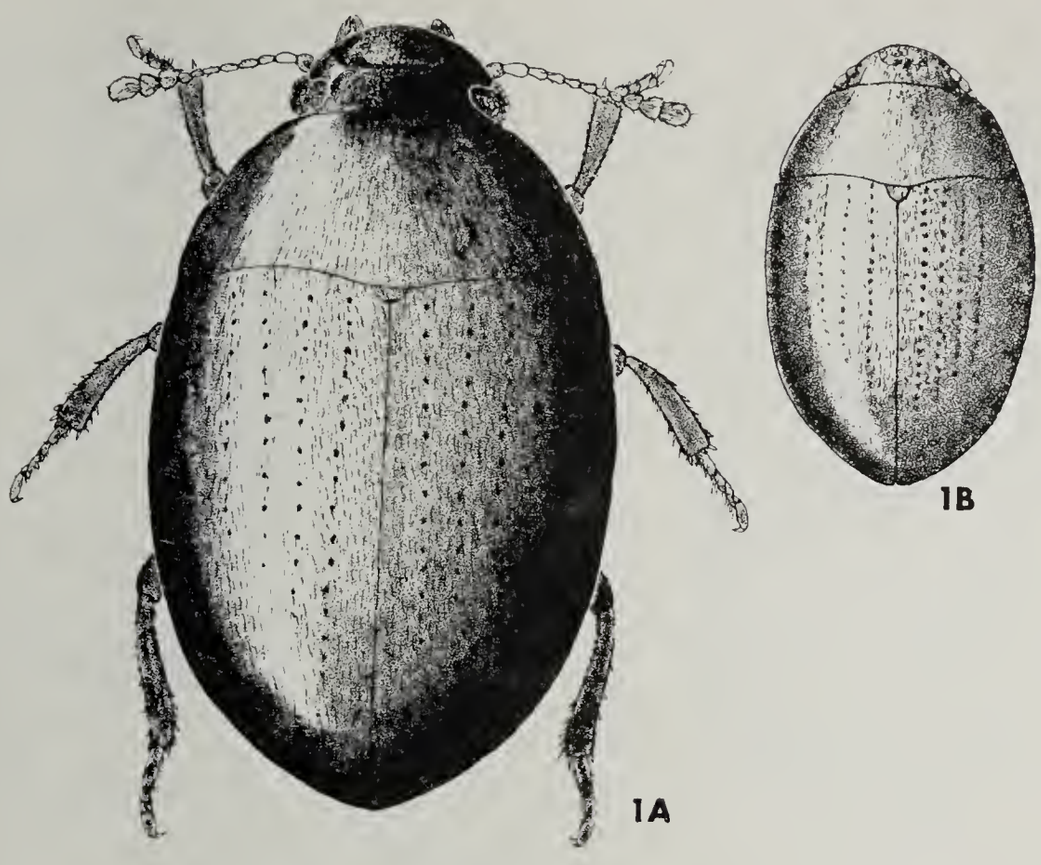


Fig. 1, *Uloporus ovalis* Casey, dorsal aspect: A) head and appendages extended; B) head and appendages retracted.

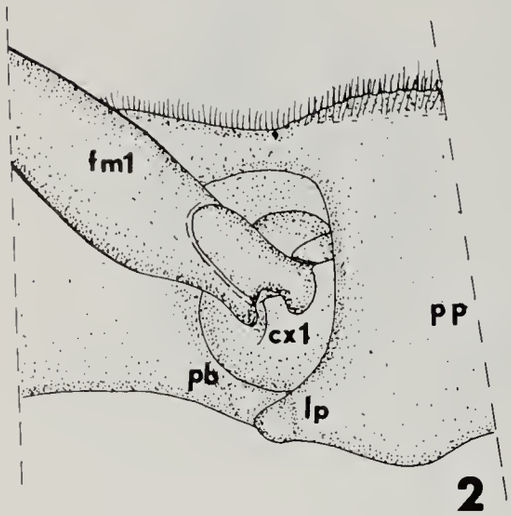
1. Procoxae (Fig. 2): the procoxae lack concealed, lateral extensions which are present in Tenebrionidae (Watt 1974:447, Fig. 72).

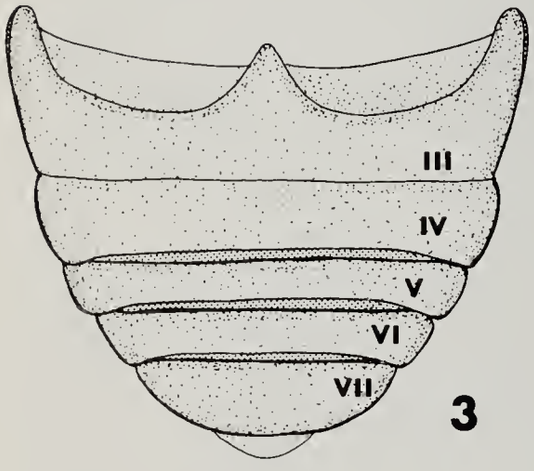
2. Abdominal sterna (Fig. 3): only two abdominal sterna (III & IV) are connate; sternum V is also connate in the tenebrionids (Doyen 1966:134, Fig. 53). We point out that the connate sterna may signify abdominal gland or reservoir development, as discussed for tenebrionids by Doyen (1972), though the question remains uninvestigated in the archeocrypticids.

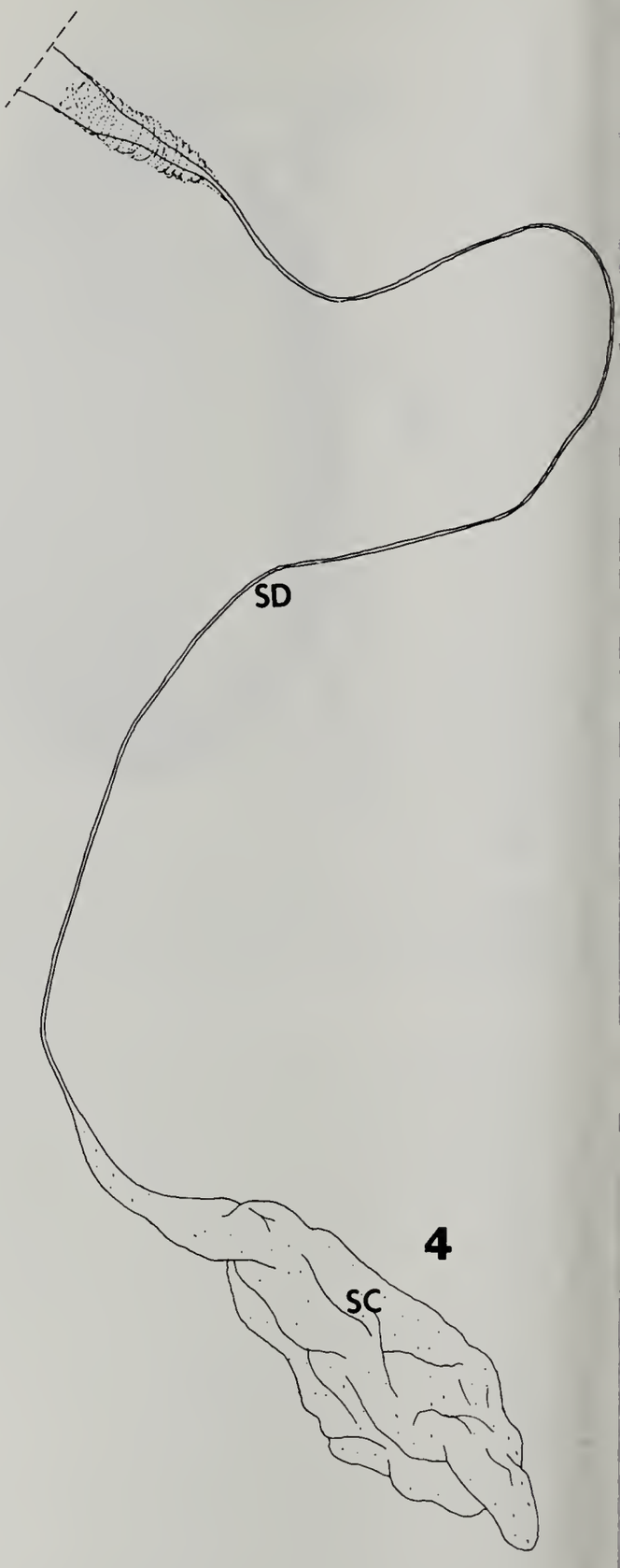
3. Aedeagus (Figs. 5, 6): the aedeagus is lightly sclerotized (Fig. 5), and the parameres setose (Figs. 5, 6). A distinct sclerite is located on an enlarged region of the ejaculatory duct (Fig. 5: ds). Because the ejaculatory duct is easily torn from the base of the aedeagus, care should be taken in preparation of the genitalia to retain this structure. We do not yet know the significance of this sclerite, but similar sclerotizations should be looked for in other archeocrypticids, and related tenebrionids.

4. Intercoxal process of prosternum (Fig. 2): the intercoxal process of the prosternum has lateral posterior extensions which close the procoxal cavities, in part, and embrace the procoxae.

5. Spermatheca (Fig. 4): the spermatheca appears to be membranous, bulbous, and connected by a long, thin duct. No spermathecal gland was observed. Our material consisted of dried, pointed specimens, and the soft parts were poorly preserved. Further study of the spermatheca should be made with fluid-preserved specimens to verify the structure of the capsule and duct, and absence of a spermathecal gland, including the enlarged area at the base of the duct.



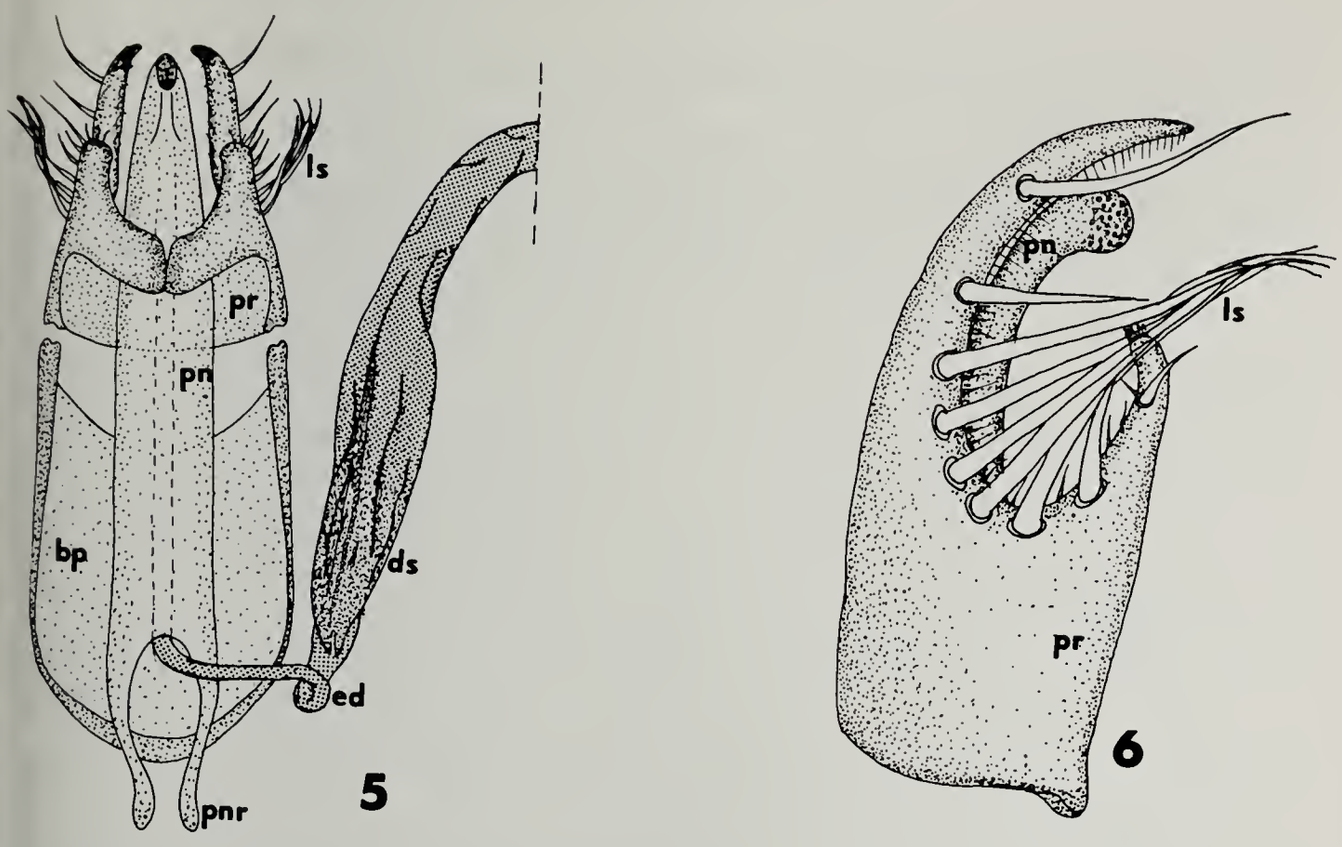




Figs. 2-4, *Uloporus ovalis* Casey: 2) prosternum and base of right prothoracic leg; 3) abdominal sterna; 4) spermatheca.

Distribution

In his description of *Uloporus ovalis,* Casey mentioned that the species is "widely distributed throughout the states bordering the Gulf of Mexico". This was a puzzling statement since he had only two specimens, both from Columbus, Texas, in his collection and since that is the only locality given



Figs. 5-6, *Uloporus ovalis* Casey: 5) aedeagus, ventral aspect; 6) paramere and penis, lateral aspect.

in his description. He must have been aware of the series of specimens collected by Hubbard and Schwarz, now in the National Museum (USNM) as follows: Columbus, Texas (9); Columbus, Texas, Hubbard & Schwarz coll. (5); Enterprise, Fla. (1); Enterprise, Fla., Hubbard & Schwarz (3). Casey credits Schwarz with providing the specimens from which his description was written.

We believe that *U. ovalis* is far more abundant and widespread than even Casey suspected. Part of the problem is that it is not readily recognized, even by experienced Coleopterists. Another is that until a specific ecological habitat is established, specimens are likely to be taken in large numbers only in berlese samples. Below are the localities from which we have seen specimens.

Mexico: *Hidalgo* (7 mi NE Jacala, 23-VI-1975) QDWC, LEWC; *Morelos* (7 mi E Cuernevaca, 6-VII-1975) LEWC; *San Luis Potosi* (El Salto de Agua, 20-VI-1975) QDWC; (5 mi N Tamazunchale, 23-VI-1975) LEWC; *Puebla* (5 mi SW Chipilo, 26-VI-1975) QDWC; *Tamaulipas* (Galeana Canyon, 19-VI-1975) LEWC; *Veracruz* (2 mi NE Catemaco, 1-VII-1975) LEWC.

Panama: *Panama Prov.* (Las Cumbres, III-VI, UV light) OSUC.

United States: *Kentucky* (Christian Co., 5 mi W Hopkinsville, 22-IX-1967, deciduous duff) CNCI; *Texas* (Bexar Co., 5 mi W San Antonio, 6-III-1977, Helotes litter) JRAC, (Colorado Co., Columbus) OSUC; *North Carolina* (Burke Co., in second year cones of *Pinus strobus*) USNM; *South Carolina* (Marlboro Co., XII, woods trash) USNM (reported by Kirk, 1969:65).

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